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ABSTRACT

The Self Description Questionnaire (SDQ) is a multidimensional instrument designed to measure seven facets of self-concept hypothesized in Shavelson's hierarchical model. The SDQ, along with measures of attributions and academic achievement, was administered to primary school students from two quite diverse populations. Separate factor analyses of responses from the two groups were quite similar and clearly demonstrated the seven factors that the SDQ is designed to measure. The small correlations among the different dimensions were similar for the two groups and consistent with the hierarchical structure in Shavelson's model. Consistent and predictable correlations were also observed between the different self-concept dimensions and: (1) attributions of responsibility for academic outcomes; (2) academic achievement; and (3) the sex of the student. Somewhat smaller sex differences were observed for students who attended single-sex classes suggesting that they might be using a different reference group in forming their self-concepts. Overall, these findings provide compelling support for Shavelson's model of self-concept and the construct validity of the SDQ. (Author)

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Self-concept: The Construct Validity of the Self Description Questionnaire

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Self-concept: The Construct Validity of the Self Description Questionnaire

The Self Description Questionnaire (SDQ) is a multi-dimensional instrument designed to measure seven facets of self-concept hypothesized in Shavelson's hierarchical model. The SDQ, along with measures of attributions and academic achievement, was administered to primary school students from two quite diverse populations. Separate factor analyses of responses from the two groups were quite similar and clearly demonstrated the seven factors that the SDQ is designed to measure. The small correlations among the different dimensions were similar for the two groups and consistent with the hierarchical structure in Shavelson's model. Consistent and predictable correlations were also observed between the different self-concept dimensions and: 1) attributions of responsibility for academic outcomes; 2) academic achievement; and 3) the sex of the student. Somewhat smaller sex differences were observed for students who attended single-sex classes suggesting that they might be using a different reference group in forming their self-concepts. Overall, these findings provide compelling support for Shavelson's model of self-concept and the construct validity of the SDQ.

Self-concept: The Construct Validity of the Self Description Questionnaire

Fascination with self-concept and the volume of research on the topic have increased dramatically during the past two decades (Brookover & Passalacqua, in press; Burns, 1979; Wylie, 1974; 1979). This increased interest stems from the recognition of self-concept as an important variable, but also from the assumption that the improvement of self-concept may serve as a vehicle for the enhancement of other outcomes (Calsyn & Kenny, 1977; Shavelson & Bolus, 1981; Wylie, 1974;1979; but also see Brookover & Passalacqua, in press; Rogosa, 1980; Scheirer & Kraut, 1979). However, self-concept also has a long history as a psychological construct. Psychologists as early as William James (1890) recognized that self-concept will influence behavior and decisions. Early social psychologists (e.g., Cooley, 1902; Mead, 1934) argued that self-concept is formed by appraisal reflected from "significant others", who influence self-concept by teaching appropriate labels, rewarding and punishing behaviors. and modeling desired actions.

More recently, social psychologists (e.g. Lewin, 1948; Rosenberg, 1967; Sherif & Sherif, 1969) and educational psychologists (Brookover & Passalacqua, in press; Shavelson, et al., 1976) have also emphasized the importance of the reference group -- a group to which a person belongs or aspires -- in understanding self-concept. Reference groups may establish standards as to what constitutes adequate performance in areas like school achievement (Chapman & Volkman, 1939; Strang, Smith & Rogers, 1978). This notion has been used to explain why children from extremely disadvantaged groups often have no lower self-concepts than other children (e.g., American Blacks -- Brookover & Passalacqua, in press;

Heiss & Owens, 1972; Rosenberg, 1973; American Indians -- Lammers, 1970; Withycombe, 1971; English West Indians -- Louden, 1977; New Zealand Maori -- Ausubel, 1965; South African Afrikaners -- Momberg & Page, 1977).

However, the explanation of self-concept in terms of different reference groups is complicated, since most people have multiple reference groups. A person may choose a reference group that will enhance self-concept and protect the ego (Rosenberg, 1967), but this does not always appear to be the case. American Blacks in segregated schools have higher self-concepts than Blacks in integrated schools (Brookover & Passalacqua, in press; Colement, et al., 1968). Similarly, Siminole American Indians are more integrated into the predominant culture than are Miccosickee Indians, but have lower self-concepts (Lefly, 1974). In contrast, Paiute American Indians in a segregated school had lower self-concepts than Paiute Indians in integrated schools (Withycombe, 1971). Strang et al. (1978) found that when academically disadvantaged children were shifted from special classes containing only disadvantaged children to a mixture of regular and special classes, their self-concepts increased when compared to a randomly assigned control group who continued attending only special classes. It was as if these children still used the other disadvantaged children as a basis of comparison, but assumed that they must be better since they were "advanced" to regular classes. In another condition of this same study, the authors found that children attending a mixture of classes showed lower self-concepts when explicitly instructed to compare themselves with non-disadvantaged children in their regular classes. While the determination of an appropriate reference group is important to the understanding of self-concept, the basis of selection of this

reference group is not well understood.

In spite of the large quantity of self-concept research, definitions of self-concept are imprecise, distinctions between self-concept and related variables have not been specified, few of the more commonly used measurement instruments have been adequately studied, and the empirical search for the different facets of self-concept has been unproductive (Crowne & Stephens, 1961; Marx & Winne, 1978; Marsh & Smith, in press; Shavelson, Hubner & Stanton, 1976; Shavelson & Bolus, 1981; Wylie, 1974; 1979). Researchers have sought to demonstrate that there are consistent, distinct components of self-concept (within-network studies), and that self-concept is distinct from other variables such as academic achievement that are hypothesized to be separate constructs (between-network studies). Logically, the clarification of within-network issues is a prerequisite to meaningful study of between-network inferences (Marx & Winne, 1978; Shavelson, et al., 1976).

An implicit assumption of most self-concept theorists is that self-concept is multidimensional. This assumption is the foundation of Shavelson's model of self-concept (Shavelson, et al., 1976; Shavelson & Bolus, 1981) which is the basis of the self-concept instrument to be discussed in this study. According to Shavelson's definition, self-concept is an individual's perception of self, and is formed through experience with the environment, interactions with significant others, and attributions of his/her own behavior. Self-concept is both descriptive and evaluative. Self-concept is multidimensional and hierarchically organized, with perceptions moving from inferences about self in subareas (e.g., academic -- reading and mathematics), to broader areas

(academic and nonacademic), and finally to general self-concept. Self-concept becomes increasingly multifaceted as an individual moves from infancy to adulthood, and will depend upon the particular category system developed by an individual and shared by a reference group.

Many attempts to demonstrate the multidimensionality of self-concept have relied upon factor analysis. In the exploratory mode of the approach, the investigator simply factor analyses responses and tries to make sense of the factors that emerge. In the confirmatory mode, the attempt is at least to replicate previously identified factors or preferably to demonstrate empirical support for theoretically based dimensions that the instrument is designed to measure. If the match between hypothesized and obtained factors is reasonably good, then there is support for both the construct validity of the instrument and the multidimensionality of self-concept. Typically the match is not clear and the interpretation is ambiguous. This ambiguity is even more likely when factor analysis has not been used in the development and revision of the instrument.

Numerous studies have factor analyzed self-concept instruments, and they generally find evidence for more than one factor (see Marsh & Smith, in press; Shavelson, et al., 1976; Wylie, 1974; 1979; for reviews). However, taken together these studies have not led to a clear understanding of the dimensions of self-concept. Derived factors tend to be idiosyncratic to the particular instrument being considered, difficult to interpret, inconsistent across different samples, unable to be replicated, not clearly related to scales the instrument was designed to measure, or not based upon any theoretical rationale.

The Self Description Questionnaire (SDQ) was developed in an attempt to overcome some of the problems inherent in most self-concept surveys (Marsh, Smith & Barnes, Note 1). The SDQ is explicitly based upon Shavelson's model of self-concept, and thus the hypothesized dimensions of self-concept have a good theoretical rationale. Factor analysis was used extensively to revise earlier versions of the SDQ, thus enhancing the likelihood of finding a reliable and interpretable set of factors. Factor analysis of responses from a large number of fifth and sixth grade students provides good support for the hypothesized dimensions (Marsh, et al., Note 1). In this same study, teachers were also asked to judge each student's self-concepts for the same dimensions, and a multitrait-multimethod analysis offered support for both the convergent validity and divergent validity of the self-concept dimensions. Not only was there student-teacher agreement on each self-concept dimension, but agreement on any one dimension was relatively independent of agreement on other dimensions.

The purpose of the present investigation is to compare the results of that earlier study with those obtained from a substantially different population of students. Specifically, this study will determine if: 1) the factor structure of the SDQ is consistent across the two populations, and 2) there is a predictable pattern of correlations between the self-concept scales and other important variables that is consistent across the two populations. Students in the first population attend coeducational public schools in an inner-city area, come from lower socioeconomic backgrounds, and are far below average in academic achievement. Students in the second population attend private Catholic schools chosen to represent

different geographical regions of the same city and provide a broad cross-section of social classes and academic abilities. The private school students also attend primarily single-sex classes, thus making the comparison of sex differences in the two populations particularly interesting. The confirmation of the SDQ factor structure, and the demonstration of consistent and predictable relationships with other variables in two such different populations would provide strong support for both the SDQ and the Shavelson model upon which it is based.

Method

Samples and Procedures

The public school sample consisted of 655 students (47% females) attending one of six coeducational public schools in the inner city area of Sydney, Australia. The sample consisted of 5th grade (16 classes) and 6th grade (14 classes) in these schools. These students ranged in age from 9 to 13 (mean age = 11.04 years, standard deviation = 0.69) and tended to come from families in the lower-middle and lower social classes, and to be below average in academic performance. Students in this sample were asked to complete two self-report instruments (the SDQ and the IAR) and a standardized reading achievement test. The self-report surveys were read aloud to students, though this was unnecessary for most students. All three instruments were administered by the same female research assistant. A more detailed description of this sample and procedure is presented by Marsh, Smith & Barnes (Note 1).

The private Catholic school sample consisted of 498 students (45% female) attending one of eleven schools in metropolitan Sydney, Australia. These schools were systematically chosen to represent

different geographical areas of the city, and to provide a good cross-section of the school district in terms of social class and academic achievement. Students in this sample were all from the sixth grade and ranged in age from 10 to 13 (mean age = 11.61 years, standard deviation = 0.44). Unlike students in the public school sample, 90% of these students attended single-sex classes. Students in the private school sample were asked to complete a variety of different instruments (see Relich, Note 2 for more detail), but analysis in this study will be limited to the results of two self-report instruments (the SDQ and the IAR as in the public school sample) and two arithmetic achievement tests. As in the public school sample, the two self-report instruments were read aloud to students. All instruments were administered by one of two male graduate students.

Instruments

SDQ. The Self Description Questionnaire (SDQ) was completed by students in both the public and private school systems. The design and development of the instrument are described in more detail in Marsh, Smith & Barnes (Note 1). The SDQ measures seven components of self-concept that are based upon Shavelson's hierarchical model (Shavelson, et al., 1976; Shavelson & Bolus, 1981). The scales and the items that measure each are presented in Table 1 of the results section. Each of the four non-academic scales (Physical Abilities, Physical Appearance, Relations With Peers, and Relations With Parents) is measured by eight positively worded items and one negatively worded item. The three academic scales (Reading, Mathematics, and All School Subjects) are each measured by 10 parallel items; five cognitive items and five affective items. For each of the academic scales, one affective and one cognitive item is negatively worded, and the other eight

are positively worded. After first being given instructions and several examples, students respond to each item with one of five response options ("False", "Mostly False", "Sometimes False, Sometimes True", "Mostly True", and "True").

On the basis of previous research (see Marsh, et al., Note 1) four of the original 66 items were excluded. These four items failed to correlate highly with other items from the same scale, and were generally difficult for students to interpret. Coefficient alphas for the seven dimensions, based upon the 62 items shown in Table 1 of the Results section, varied from .80 to .94 (the actual coefficient alpha reliability estimates are shown in Table 2 of the Results section).

Self-concept ratings are summarized by seven factor scores and three total scores. Responses to each item were standardized to have a mean of zero and a standard deviation of one across both samples, and were then weighted by factor score coefficients to obtain the seven factor scores. The factor score coefficients (see Nie, et al., 1975) were based upon previous research (Marsh, et al., Note 1). The three total scores were determined by summing factor scores for the four non-academic scales (Total Non-Academic Self-Concept), the three academic scales (Total Academic Self-Concept), and all seven scales (Total Self-Concept). Finally, each of the 10 self-concept scores -- the seven factor scores and the three total scores -- was standardized to have a mean of 50 and a standard deviation of 10 across the combined set of responses by students from both public and private schools.

IAR. Students in both samples completed the Intellectual Achievement Responsibility (IAR) scales. This instrument was developed for "assessing children's beliefs that they, rather than

other people, are responsible for their intellectual-academic success and failures" (Crandall, Katovsky & Crandall, 1965, p. 91). Children who internalize responsibility for academic success may attribute success to either their high ability or high effort. Similarly, failure may be attributed to a lack of ability or a lack of effort. Although not originally designed to do so, many of the IAR items specifically refer to attributions of either ability or effort. Consequently, Dweck (1975; Dweck & Reppucci, 1973) has suggested four separate subscales: success due to ability, success due to effort, failure due to lack of ability, and failure due to lack of effort. In the present investigation the coefficient alpha reliabilities (see Table 3 in Results section) for the four subscales are low (.32 to .54) and even the total score is not particularly reliable (.63 and .68 in the two samples). The reliabilities for the total scores are, however, similar to those found by the authors of the IAR (Crandall, et al., 1965).

PAT. The reading comprehension section of the Progressive Achievement Tests (PAT) was only completed by the public school students. The PAT was developed by the New Zealand Council for Educational Research and later adopted and normed by the Australian Council for Educational Research (ACER,1973). The items actually administered vary according to grade level. Approximately 2/3 of the items for fifth and sixth grade students are identical, but the additional 1/3 administered to fifth graders are somewhat easier and those administered to sixth graders somewhat more difficult.

The average scores of public school students in this study (12.0 for grade 5 and 13.5 for grade 6) are far below the national

averages, but are similar to those reported in earlier research involving many of the same schools (Turney, Inglis, Sinclair & Straton, 1978). Coefficient alphas (Hull and Nie, 1981) were reasonably high for both groups (.82 and .83), but several factors suggest that these values may be substantially inflated. For both samples the average percentage of correct response was about 30%, and was only marginally higher than the 20% chance guessing level. Furthermore, the pattern of responses indicates that many of the more difficult items (those appearing near the end of each test) were not even attempted by a majority of the students and that the percentage of correct responses for these items was significantly below chance. Consequently, the coefficient alphas are likely to be substantially larger than might be expected if reliability had been estimated from alternative forms of the same test administered on two occasions. Furthermore, the difficulty of the test -- relative to the ability level of the students in this particular study -- also dictates caution in the interpretation of the test scores.

For purposes of this study, total reading scores were standardized separately for the fifth and sixth grade samples. After standardization, each group had total scores with a mean of 0.0 and a standard deviation of 1.0.

Arithmetic Achievement. Students in the private schools completed both a general arithmetic test and a test containing only division problems. General arithmetic achievement was measured by 45 items in the Class Achievement Test in Mathematics (Year 4/5) examination and is based upon an "Australian average" syllabus

(ACER, 1979). The coefficient alpha reliability for the test in this sample was .82. The division test consisted of 18 problems with one to four digit divisors (see Relich, Note 2). The coefficient alpha of this test was .83, and it correlated .58 with the general arithmetic test. For purposes of this study, the two arithmetic measures were standardized (mean = 0.0, standard deviation = 1.0) and then combined. The self-concept scores were then correlated with scores on the general test, the division test, and the combination of the two.

Results

Factor Analysis.

Factor analysis of the public school responses (see Table 1) clearly identifies the seven dimensions that the SDQ is designed to measure, and an additional factor that is defined by affective items from all three academic scales. The factor analysis of the private student responses (see Table 1) provides a strong confirmation of this eight factor solution. In both factor analyses, virtually every item loads most highly on the dimension it is designed to measure, and less substantially on other dimensions.

Insert Table 1 About Here

Correlations among the seven SDQ dimensions vary between zero and .4, while the reliabilities of the seven scales are in the .80's and .90's (see Table 2). The pattern of correlations among the different factors is quite similar for the two groups. Furthermore, while the size of the correlations is modest, the correlations are generally consistent with Shavelson's hierarchical model. The model predicts higher correlations among the academic factors, between the two physical factors, and between the two social

relationship factors. With one important exception, the results for both groups are consistent with these predictions. The exception is the near zero correlation between self-concepts in Mathematics and Reading that occurs for both groups. Also, the high correlations between the Relations With Peers factor and the two physical factors are somewhat unexpected. This suggests that young children select friends on the basis of physical characteristics.

Insert Table 2 About Here

In summary, both the factor analyses provide strong support for the seven dimensions that the SDQ is designed to measure and the Shavelson's model upon which the SDQ is based. Items load substantially on the dimensions that they were designed to measure and not on other dimensions; correlations among the factors tend to be modest; and the correlations that are observed are generally consistent with Shavelson's hierarchical model. The consistency of these findings across two such different samples makes these conclusions particularly compelling.

Sex and Sample Differences

Wylie (1968), summarizing primarily American studies, concluded that girls between the ages of eight and thirteen have more positive self-concepts than do boys. In contrast, Australian research has shown that boys have more favourable self-concepts than do girls (Connell, et al., 1975; Smith, 1975; 1978). These studies also suggest that sex differences in self-concept depend upon age (Connell, et al., 1975), the particular dimension of self-concept that is being considered and the self-concept instrument that is used (Smith, 1975; 1978). While these studies do not provide a good basis for predicting

sex differences on the SDQ, several predictions can be made on the basis of prevailing sexual stereotypes; boys are expected to have higher self-concepts for Physical Abilities and Mathematics, while girls should have higher self-concepts in Reading.

There is no particular basis for predicting differences in self-concepts for the public and private school samples. It is expected, however, that sex differences in self-concept will be smaller in the private schools than in the public schools, since these students, unlike those in the public schools, generally attended single-sex classes. To the extent that classmates serve as a reference group, private students will be comparing themselves to other students of the same sex while public school students will be comparing themselves to a reference group that contains both boys and girls.

Two-way Anovas, using sex (Male vs Female) and type of school (public vs private) as the independent variables, were performed on each of the self-concept scores (see Table 3). The main effect of sex was as predicted; boys had substantially higher self-concepts in Physical Abilities and Mathematics, and lower self-concepts in Reading. Furthermore, the sex-by-sample interactions were statistically significant for each of these three self-concept scores, with the sex differences being smaller in the private schools. However, further analyses indicated that even in the private schools the sex differences were not eliminated for any of these three self-concepts. The magnitude of the sex differences was smaller in the private schools but the direction of the differences was similar.

Insert Table 3 About Here

While there are other significant effects due to either the sample or student sex, the interaction between these two variables failed to reach statistical significance for any other self-concept scores. Girls tended to have lower self-concepts for each of the non-academic self-concepts (except Relations with Parents) and higher self-concepts for the academic factors (except Mathematics). Overall, girls had somewhat lower self-concepts. Public school students had higher self-concepts in the two physical areas, but lower self-concepts in Relations With Parents . There were no differences between the two samples for Total Academic Self-Concept or Total Self-Concept.

These findings clearly demonstrate that sex differences in self-concept vary dramatically and predictably with the particular dimension of self-concept that is being considered. Particularly, the most dramatic sex differences (i.e., Physical Ability, Reading and Mathematics) are consistent with well established sexual stereotypes. However, sex differences in self-concept were smaller -- though still present -- in each of these three areas, for private students who attended single-sex classes. This suggests, though other explanations might be viable, that reference groups that contain both boys and girls accentuate sex differences in self-concept in the direction of traditional sexual stereotypes.

Attributions for Academic achievement

The attribution of causes for success and failure have important implications (Heider, 1958; Jones & Davis, 1965; Kelley, 1971), and have been applied to academic settings (Dweck, 1975; Weiner, 1980). Academic success and failure are commonly attributed to ability and

effort, but the perceived causes may also include luck, task difficulty, and a host of other idiosyncratic factors. These perceived causes can be classified along dimensions of locus (internal or external) and control (causes under the control of the student or not), as well as other dimensions (see Weiner, 1980). For example, students can internalize responsibility by attributing academic outcomes to ability or effort, or externalize responsibility by attributing outcomes to such environmental factors as luck or task difficulty.

The IAR asks students to attribute success or failure for academic outcomes to either internal causes (e.g. ability or effort) or external causes (e.g., luck or task difficulty) on each of 34 forced-choice items. The number of internal responses is a measure of academic locus of attribution that varies on a continuum from external to internal. Crandall et al., (1965) computed separate scores for success and failure outcomes, while Dweck (Dweck & Reppucci, 1973) further divided these into scales reflecting ability and effort attributions; success due to ability, success due to effort, failure due to lack of ability, and failure due to lack of effort.

Self-concept has generally been linked to the tendency to internalize responsibility (Burns, 1979; Chandler, 1976; Smith, 1978). Marsh (Marsh, Smith & Barnes, Note 1) argued that this is only reasonable for success outcomes. High self-concept is consistent with attributions to high ability and high effort for success outcomes but not with attributions to a lack of effort and particularly not with attributions to a lack of ability in failure outcomes. Persons with a high self-concept may be willing to attribute failure

to a lack of effort, since a more favourable outcome that is consistent with their positive self-concept might be expected with more effort. Ability, however, cannot be so easily altered, and so it is unlikely that a person with a high self-concept would attribute failure to a lack of ability. These suggestions imply that self-concept should be most highly correlated with ability and effort attributions in success situations, and negatively correlated (or least positively correlated) with lack of ability attributions in failure situations. Since the IAR only asks about academic attributions, these relationships should be most marked for the academic areas of self-concept.

Various subdivisions of the IAR are correlated with different self-concept dimensions for both public and private school students (see Table 4). In general, the predicted pattern of relationships is evident in both samples. Self-concept -- particularly academic self-concept -- is positively correlated with attributions to ability and effort in success situations. However, in failure situations, the correlations are much lower, tending to be near zero for attributions to a lack of effort and slightly negative for attributions to a lack of ability. It is also interesting to note that the Total IAR score that is normally computed (the sum of the four subscales) is less correlated with self-concept than a Total IAR score in which the failure-ability items are reflected (see X_{Total} in Table 4). These findings are consistent for both samples, though the correlations tend to be somewhat more positive for private students.

Insert Table 4 About Here

In summary, attributions for responsibility for academic success and failure demonstrate predictable correlations with different self-concept areas. Attributions to ability and effort in success situations were most highly correlaced with self-concept, followed by effort attributions for failure outcomes, and then ability attributions in failure situations. The pattern is most salient for academic self-concepts. However, a better test of these predictions requires an instrument that more clearly differentiates between ability and effort, and one that achieves a more acceptable level of reliability.

Academic Achievement

Academic achievement is generally correlated with self-concept, and particularly with academic self-concept (Shavelson & Bolus, 1981; Wylie, 1979; Brookover & Passalacqua, in press). This relationship is even stronger if academic self-concept is determined by asking students to rank themselves against their classmates (or some other comparison group) in terms of the academic achievement being measured (e.g. Brookover & Passalacqua, in press; Nicholls, 1976). Such correlations contribute to the construct validity of the self-concept measures, though Shavelson & Bolus (1981) warn that the correlations must not be so high that academic self-concept cannot be distinguished from academic achievement and school grades.

Private school students completed two arithmetic tests and their scores are correlated with the different self-concept measures (see Table 5). As predicted by Shavelson's model, arithmetic achievement is most highly correlated with self-concept in Mathematics, followed by All School Subjects, and then Reading. Correlations between arithmetic achievement scores and each of the non-academic

dimensions of self-concept are close to zero.

Insert Table 5 About Here

Public school students completed a reading achievement test and their scores were also correlated with the different self-concept scales. Again the pattern of results follow the predictions of the Shavelson model, though the correlations are lower than those observed for private school students. Reading achievement is most correlated with self-concept in Reading, followed by All School Subjects, and then Mathematical self-concepts. Again, correlations with non-academic areas are close to zero or even negative. A possible explanation for the extremely low magnitude of these correlations may lie in the combination of the test difficulty, the time limits, and the low reading ability of the students. The coefficient alpha of the reading test was acceptable, but the estimate may have been inflated by the fact that many of the students completed only a small proportion of the items.

In summary, the consistent and predictable pattern of correlations among the different self-concept scores and academic achievement measures adds further support to the construct validity of the SDQ. In each instance, the achievement measure was most highly correlated with the matching self-concept scale, followed by self-concept in All School Subjects, and then the other academic self-concept scale. In contrast, correlations between the achievement measures and non-academic dimensions of self-concept were close to zero. In the terms of the Campbell & Fiske (1959) criteria for multitrait-multimethod analysis, this demonstrates both the convergent and divergent validity of the self-concept dimensions.

Discussion

The Self Description Questionnaire (SDQ) is designed to measure seven facets of self-concept that are hypothesized in Shavelson's hierarchical model. The purpose of this study is to test the construct validity of the SDQ and to test the generality of this validity across two diverse populations. This was accomplished by factor analysing the self-concept ratings, investigating the pattern of relationships between the self-concept dimensions and other variables, and examining the consistency of these findings across the two populations. For both populations the factor analyses of the SDQ clearly demonstrated the seven dimensions that the SDQ is designed to measure. In both populations the different self-concept dimensions showed consistent and predictable correlations with student sex, attributions of causes of academic success and failure, and academic achievement. Taken together, these findings provide compelling support for the construct validity of the SDQ.

These findings also provide further support for the Shavelson model that was used in the design of the SDQ. Shavelson argued that self-concept is multidimensional and suggested what many of these important components might be. The clarity of the factor structure of the SDQ supports the multidimensionality of self-concept and the existence of dimensions hypothesized from Shavelson's model. Shavelson also argued that self-concept facets are hierarchically arranged, thus providing predictions about the pattern of correlations that might be expected among the various factors. The predicted pattern was generally supported and quite consistent across the two populations. The only major exception was that self-concepts in

Mathematics and Reading, though both were correlated with self-concept in All School Subjects, were not correlated with each other. These findings provide good support for the Shavelson assertions that self-concept is multifaceted and that these facets are hierarchically arranged.

Social psychologists have long recognized that self-concept is formed in respect to one or more reference groups which serve as a basis of comparison. The application of this notion has rendered many paradoxical findings -- particularly the lack of differences in the self-concepts of disadvantaged minority children and non-disadvantaged children -- more understandable. In this study, one population of students primarily attended single-sex classes, while a second population attended co-educational classes. Across both populations there were marked and predictable sex differences in self-concept. However, in the dimensions for which the largest differences occurred (Physical Abilities, Reading and Mathematics), the size of the sex differences was smaller for students attending single-sex classes. The many other differences that exist between the two populations allow the possibility of alternative explanations. Nevertheless, the findings do suggest that when self-concepts are formed relative to a reference group containing both boys and girls, sex differences are accentuated in the direction of traditional sexual stereotypes.

Reference Notes

1 - Marsh, H.W., Smith, I.D. & Barnes, J. Multitrait-multimethod analysis of the Self Description Questionnaire: Student-Teacher agreement on multidimensional ratings of student self-concept. Paper presented at the 1981 Annual Conference of the Australian Association for Educational Research.

2 - Relich, J. Attribution and its Relation to Other Affective Variables in Predicting and Inducing Arithmetic Achievement: An Attributional Approach to Increased Self-Efficacy and Achievement in Arithmetic. Unpublished doctoral dissertation proposal, University of Sydney, Australia, 1981.

References

Australian Council for Educational Research (ACER). Progressive Achievement Tests: Reading Comprehension and Reading Vocabulary. Hawthorn, Australia: ACER, 1973.

Australian Council for Educational Research (ACER). Class Achievement Test in Mathematics (Year 4/5). Hawthorn, Australia: ACER, 1979.

Ausubel, D.P. Psychological acculturation of modern Maori youth. In Sherif, M. & Sherif, C.W. (eds.), Problems of Youth: Transition to Adulthood in a Changing World. Chicago: Aldine, 110-128, 1965.

Brookover, W.B. & Passalacqua, J. Comparison of aggregate self-concepts for populations with different reference groups. In M. Lynch, A. Noren-Hebeisen & W. Gergen (eds.) Self-concept Advances in Theory and Practice, Cambridge, Mass: Ballinger (in press).

Burns, R.B. The Self-Concept: Theory, Measurement, Development and Behaviour. London, Longman, 1979.

Calsyn, R.J. & Kenny, D.A. Self-concept of ability and perceived evaluation of others: Cause or effect of academic achievement. Journal of Educational Psychology, 1977, 69, 136-145.

Campbell, D.T. & Fiske, D.W. Convergent and discriminant validation by the multitrait-multimethod matrix. Psychological Bulletin, 1959, 56, 81-105.

Chandler, T.A. A note of relationship of internality, externality, self acceptance, and self ideal discrepancies, Journal of Psychology, 1976, 94, 145-146.

Chapman, D.W. & Volkman, J. A social determinant of the level of aspiration. Journal of Abnormal and Social Psychology, 1939, 34, 225-238.

Coleman, J., Katz, E. & Menzel, H. Medical Innovations: A Diffusion

Cooley, C.H. Human Nature and the Social Order. New York: Scribner, 1902.

Connell, W.F., Stroobant, R.E., Sinclair, K.E. Connell, R.W. & Rogers, K.W. Twelve to Twenty. Sydney: Hicks Smith, 1975.

Crandall, V.C., Katkovsky, W. & Crandall, V.J. Children's beliefs in their own control of reinforcements in intellectual-academic achievement situations. Child Development, 1965, 36 91-109.

Crowne, D.P. & Stephens, M.W. Self-acceptance and self-evaluating behavior: A critique of methodology. Psychological Bulletin, 1961, 58, 104-121.

Dweck, C.S. The role of expectations in the alleviation of learned helplessness. Journal of Personality and Social Psychology, 1975, 58, 104-121.

Dweck, C.A. & Reppucci, N.D. Learned helplessness and reinforcement responsibility in children. Journal of Personality and Social Psychology, 1973, 31, 674-685.

Heiss, J. & Owens, S. Self-evaluations of Blacks and Whites. American Journal of Sociology, 1972, 78, 360-369.

Heider, F. The Psychology of Interpersonal Relations. New York: Wiley, 1958.

Hull, C.H. & Nie, N.H. SPSS Update 7-9. New York: McGraw-Hill, 1981.

James, W. The Principles of Psychology. New York: Holt, Rinehart & Winston, 1890.

Jones, E.E. & Davis, K.E. From acts to dispositions: The attribution process in person perception. In L. Berkowitz (ed), Advances in Experimental Social Psychology, (Vol. 2). New York: Academic Press, 1965.

Kelley, H.H. Attribution in Social Interaction. Morristown, N.J. General Learning Press, 1971.

Lammers, D.M. Self-concepts of American Indian adolescents having segregated and desegregated elementary school backgrounds. (Doctoral dissertation, Syracuse University, 1969). Dissertation Abstracts International, 1970, 31, 930-A. (University Microfilms No. 70-14, 723.

Lefley, H.P. Societal and family correlates of self-esteem among American Indian children. Child Development, 1974, 45, 829-833.

Lewin, K. Resolving Social Conflicts. New York: Harper & Row, 1948.

Louden, D.M. Conflict and change among West Indian parents and adolescents in Britain, Educational Research, 1977, 20, 44-53.

Marsh, H.W. & Smith, I.D. Multitrait-multimethod analyses of two self-concept Instruments. Journal of Educational Psychology, in press.

Marx, R.W.& Winne, P.H. Construct interpretations of three self-concept inventories. American Educational Research Journal, 1978, 15, 99-108.

Mead, G.H. Mind, Self and Society: From the Standpoint of a Social Behaviorist. Chicago: University of Chicago Press, 1934.

Momberg, A.P. & Page, H.W. Self esteem of coloured and white scholars and students in South Africa. Journal of Social Psychology, 1977, 102, 179-182.

Nicholls, J.G. When a scale measures more than it denotes: the case of the test anxiety scale for children. Journal of Consulting and Clinical Psychology, 1976, 44, 976-985.

Nie, N.H., Hull, C.H., Jenkins, J.G., Steinbrenner, K. & Bent, D.H. Statistical Package for the Social Sciences, New York: McGraw-Hill, 1975.

New Zealand Council for Educational Research (NZCER). Progressive Achievement Tests: Reading Comprehension (Form A). NZCER: New Zealand, 1969.

Rogosa, D. A critique of cross-lagged correlation. Psychological Bulletin, 1980, 88, 245-258.

Rosenberg, M. Which Significant Others. American Behavioral Scientist, 1973, 16, 829 - 860.

Rosenberg, M. Psychological selectivity in self-esteem formation. In C.W. Sherif & M. Sherif (eds). Attitude, Ego-Involvement and Change New York: Wiley, 1967. 26-56.

Scheirer, M.A. & Kraut, R.E. Increasing educational achievement via self-concept change. Review of Educational Research, 1979, 49 131-150.

Shavelson, R.J. & Bolus, R. Self-concept: the interplay of theory and methods. Journal of Educational Psychology, 1981, (in press).

Shavelson, R.J., Hubner, J.J., & Stanton, G.C. Self-concept: Validation of construct interpretations. Review of Educational Research, 1976, 46, 407-441.

Sherif, M. & Sherif, C.W. Social Psychology, New York: Harper & Row, 1969.

Smith, I.D. Sex differences in self concepts of primary children. Australian Psychologist, 1975, 10, 59-63.

Smith, I.D. Sex differences in self-concept revisited. Australian Psychologist, 1978, 13, 161-166.

Strang, L., Smith, M.D. & Rogers, C.M. Social comparison, multiple reference groups and the self-concepts of academically handicapped children before and after mainstreaming. Journal of Educational Psychology, 1978, 70, 487-497.

Turney, C., Inglis, C.B., Sinclair, K.E. & Straton, R.G. Inner-City Schools: Children, Teachers and Parents. Sydney: Sydney University Press, 1978.

Weiner, B. Human Motivation. New York: Holt, Rinehart & Winston, 1980.

Withycombe, J.S. An analysis of self-concept and social status of Paiute Indian and white elementary school children in Nevada. (Doctoral dissertation, University of Connecticut, 1970) Dissertation Abstracts International, 1971, 31, 6420-A. (University Microfilms, No. 71-16, 058.

Wylie, R.C. The present status of self theory. Chapter in Borgatta, E.F. & Lambert, W.W. (eds). Handbook of Personality, Theory and Research, Chicago: Rand McNally, 1968.

Wylie, R.C. The Self-Concept. (Rev. ed., Vol. 1). Lincoln: University of Nebraska Press, 1974.

Wylie, R.C. The Self-Concept (Vol. 2): Theory and research on selected topics. Lincoln: University of Nebraska Press, 1979.

TABLE 1

Factor Analyses of the SDQ in the Public School Sample (N=655) and Private School Sample (N=498--values in parentheses)

	Self-concept Items (paraphrased)	Oblique Factor Pattern Loadings							
		I	II	III	IV	V	VI	VII	VIII
I	PHYSICAL ABILITIES								
	38 I am good at sports	78(81)	06(08)	00(01)	02(00)	-06(-02)	-10(-05)	05(03)	06(-02)
	52 I am a good athlete	65(79)	12(13)	06(03)	-06(-05)	-03(-05)	-13(-06)	10(04)	04(01)
	10 I like to run and play hard	55(41)	00(-05)	07(16)	00(04)	03(-04)	03(11)	-08(-01)	02(-07)
	24 I enjoy sports and games	53(44)	-15(-14)	03(21)	13(05)	08(05)	05(13)	-05(-13)	03(-05)
	3 I can run fast.	53(70)	16(06)	02(-13)	-06(00)	04(02)	-01(-06)	-04(02)	00(04)
	59 I'm good at throwing a ball	46(49)	00(-01)	15(14)	08(05)	02(08)	00(05)	02(04)	-03(01)
	45 I'm good at aiming at targets	42(31)	05(15)	09(05)	01(06)	-03(05)	12(03)	03(05)	-05(05)
	31 My body is strong and powerful	34(34)	26(14)	16(17)	-01(03)	-01(-13)	06(-08)	-04(09)	-05(-02)
II	APPEARANCE								
	1 I am good looking	09(03)	72(73)	03(05)	03(-06)	03(02)	00(03)	-05(03)	00(-04)
	43 I have a good looking body	11(04)	68(72)	06(08)	-02(04)	-01(-02)	06(-08)	00(00)	01(00)
	15 I have a pleasant looking face	00(03)	67(74)	08(06)	03(01)	02(05)	02(02)	04(06)	-02(-01)
	22 I am an attractive person	02(05)	65(80)	14(11)	-02(05)	04(06)	06(03)	01(00)	00(-01)
	50 I'm better looking than most of my friends	12(07)	64(65)	06(07)	04(04)	-01(-08)	03(02)	03(05)	-06(00)
	36 Other kids think I am good looking	-04(07)	63(58)	24(21)	-02(-05)	-01(02)	-05(00)	06(07)	06(-01)
	8 I like the way I look	07(05)	58(62)	02(02)	08(12)	07(00)	06(15)	01(-02)	02(02)
	57 I have nice features (for example, nose & eyes)	07(07)	54(60)	01(17)	14(07)	04(00)	-05(-07)	15(05)	02(06)
III	RELATIONSHIPS WITH PEERS								
	14 I make friends easily	00(10)	-04(07)	69(57)	06(05)	02(-02)	05(-06)	-10(01)	00(13)
	28 I get along with other kids easily	09(04)	-04(03)	63(68)	09(02)	-02(02)	-02(03)	07(05)	00(07)
	7 I have lots of friends	08(12)	-07(-03)	58(57)	09(10)	04(03)	-01(04)	-01(-02)	00(-02)
	42 Other kids want me to be their friend	07(09)	18(15)	50(51)	04(-01)	02(00)	-13(04)	07(05)	-06(02)
	63 Most other kids like me	11(12)	24(16)	44(65)	09(11)	-07(01)	-07(00)	13(06)	01(00)
	56 I am popular with kids my own age	09(19)	26(19)	41(52)	08(02)	-02(-01)	00(-06)	05(08)	-01(00)
	35 I am easy to like	01(03)	34(29)	36(45)	04(05)	01(02)	-03(01)	10(19)	04(07)
	*21 Most kids have more friends than I do	08(-03)	06(-05)	35(58)	-15(-05)	-04(00)	06(13)	01(06)	02(15)
IV	RELATIONSHIP WITH PARENTS								
	54 I get along well with my parents	01(-04)	-03(-02)	-03(08)	70(72)	-07(-05)	00(02)	13(04)	-01(-04)
	61 My parents and I have a lot of fun together	-04(09)	08(01)	02(06)	67(69)	-07(01)	-01(-03)	04(02)	-03(02)
	47 My parents are easy to talk to	05(04)	07(-06)	06(-06)	54(62)	-05(02)	07(-06)	09(16)	-03(-03)
	26 My parents like me	00(05)	03(02)	08(03)	52(35)	15(-03)	12(08)	-08(-01)	-03(-09)
	40 My parents and I spend a lot of time together	01(03)	07(08)	-02(10)	49(55)	03(01)	00(06)	00(-01)	02(10)
	33 I want to raise my children like my parents did	03(-06)	03(05)	02(02)	44(42)	03(06)	05(04)	-03(-01)	07(10)
	5 My parents understand me	06(00)	-03(03)	12(04)	43(49)	01(05)	-01(04)	-02(08)	02(01)
	19 I like my parents	-01(05)	-02(-02)	08(-01)	36(38)	09(-01)	17(06)	-06(-08)	-04(02)
V	READING								
	18 I look forward to reading	-03(-08)	05(-01)	02(04)	01(04)	66(82)	-12(06)	03(-10)	31(16)
	11 I like reading	-08(-05)	00(-04)	05(04)	14(-01)	65(85)	03(01)	-07(-10)	20(08)
	25 I am interested in reading	01(-02)	01(-05)	-02(00)	07(-02)	65(80)	-14(-05)	-01(-05)	32(21)
	39 I enjoy doing work for reading	-05(-04)	-04(02)	06(01)	10(03)	61(73)	-14(-08)	04(-04)	30(24)
	*60 I hate reading	-10(05)	-01(-04)	-05(-01)	06(-02)	48(70)	00(04)	00(02)	18(08)
	53 I'm good at reading	00(05)	08(08)	04(01)	00(03)	69(77)	09(05)	05(23)	-05(-14)
	65 I learn things quickly in reading	06(10)	02(05)	04(04)	02(05)	58(66)	00(-02)	21(28)	01(-09)
	46 Work in reading is easy for me	10(04)	01(06)	08(06)	00(05)	56(61)	03(03)	10(30)	01(-09)
	4 I get good marks in reading	02(01)	10(08)	-02(-04)	04(03)	54(56)	04(11)	13(31)	-09(-16)
	*32 I am dumb in reading	-01(03)	-02(01)	00(-06)	04(12)	43(59)	15(08)	07(26)	00(-07)
VI	MATHEMATICS								
	34 I am interested in maths	08(-02)	02(-03)	03(02)	-01(04)	-15(-02)	42(45)	00(-05)	64(63)
	13 I enjoy doing work for maths	-03(00)	08(04)	08(01)	-05(-02)	-17(01)	42(52)	-06(-12)	67(59)
	20 I look forward to maths	11(-01)	08(09)	05(02)	-03(03)	-14(-02)	39(47)	-01(-08)	59(62)
	48 I like maths	05(01)	06(02)	00(05)	03(00)	-19(-04)	39(53)	06(-10)	64(62)
	* 6 I hate maths	-06(-07)	-02(-03)	-03(00)	-02(-03)	-07(05)	37(46)	-05(-17)	37(51)
	55 I am good at maths	10(08)	01(06)	01(-05)	00(04)	-07(-05)	64(71)	25(28)	10(13)
	27 I get good marks in maths	00(02)	10(-01)	04(04)	-02(-01)	-08(-06)	59(65)	29(29)	04(10)
	41 I learn things quickly in maths	15(-02)	01(02)	00(00)	02(16)	-05(-03)	54(60)	25(29)	09(10)
	62 Work in maths is easy for me	10(00)	02(-03)	08(04)	-01(04)	-15(-03)	53(62)	33(37)	06(09)
	*66 I am dumb at maths	05(08)	01(04)	02(01)	07(02)	01(00)	46(48)	12(15)	-07(09)
VII	SCHOOL SUBJECTS								
	44 I like all school subjects	02(03)	00(-06)	06(04)	07(02)	06(04)	-15(08)	65(50)	41(60)
	51 I am interested in all school subjects	00(08)	01(-02)	02(03)	06(08)	06(02)	-12(14)	61(44)	33(64)
	58 I look forward to all school subjects	02(04)	-01(-01)	-02(04)	05(04)	04(09)	00(16)	58(45)	33(61)
	9 I enjoy doing work for all school subjects	-04(-04)	00(02)	01(02)	05(05)	08(07)	05(-11)	45(34)	31(56)
	*44 I hate all school subjects	-04(-02)	-04(-04)	00(01)	05(09)	19(21)	07(13)	23(14)	24(44)
	30 I learn things quickly in all school subjects	08(02)	-03(08)	12(16)	07(11)	13(04)	19(28)	45(46)	-11(07)
	16 I get good marks in all school subjects	-02(01)	04(07)	04(10)	-07(-04)	16(03)	28(19)	43(58)	-17(-01)
	37 Work in all school subjects is easy for me	01(00)	12(00)	10(06)	-05(02)	19(06)	23(25)	41(59)	-06(01)
	2 I'm good at all school subjects	06(-06)	08(14)	12(13)	-08(-01)	14(-01)	19(24)	40(48)	-04(04)
	*23 I am dumb in all school subjects	04(03)	-08(-03)	10(05)	06(12)	11(12)	23(36)	24(39)	-04(-01)

*Negatively worded items have been reflected.

Note: All loadings are presented without decimal points. Factor loadings in the boxes are loadings for items designed to measure each factor. Both factor analyses consisted of a principal components analysis, Kaiser normalization, and rotation to a direct oblimin criterion (See Nie, et al., 1975). Correlations between factor scores are shown in Table 2.

TABLE 2

Correlations Among Self-concept Scores For Public (Pub) School Students (N=655) and Private (Priv) School Students (N=498)

Self-concept Scores		1	2	3	4	5	6	7	8	9	10
1 Physical Abilities	Pub	(.83)									
	Priv	(.81)									
2 Physical Appearance	Pub	.29	(.90)								
	Priv	.31	(.91)								
3 Relations With Peers	Pub	.42	.42	(.81)							
	Priv	.40	.43	(.86)							
4 Relations With Parents	Pub	.10	.09	.25	(.80)						
	Priv	.18	.09	.29	(.80)						
5 Reading	Pub	-.02	.04	.07	.17	(.89)					
	Priv	.00	.06	.04	.13	(.93)					
6 Mathematics	Pub	.17	.07	.14	.01	-.06	(.92)				
	Priv	.01	.05	.14	.15	.08	(.94)				
7 All School Subjects	Pub	.13	.16	.21	.09	.29	.38	(.85)			
	Priv	.09	.20	.31	.19	.25	.56	(.89)			
8 Total Non-Academic (1-4)	Pub	.67	.68	.78	.54	.09	.14	.22	(.89)		
	Priv	.71	.65	.76	.52	.06	.14	.26	(.90)		
9 Total Academic (5-7)	Pub	.14	.14	.21	.14	.60	.65	.82	.22	(.90)	
	Priv	.04	.15	.16	.24	.60	.65	.82	.22	(.93)	
10 Total Self-Concept (1-7)	Pub	.56	.56	.68	.46	.40	.46	.61	.84	.72	(.91)
	Priv	.51	.53	.61	.49	.40	.49	.67	.81	.75	(.93)

Note: Self-concept factor scores were determined by using factor score coefficients derived from the public school sample to weight standardized responses to each item. The three Total Scores were derived by summing the four non-academic scales (1-4), the three academic scales (5-7), and all seven scales. The values in parentheses are coefficient alpha reliability estimates.

TABLE 3

Means and Effect Sizes Resulting From ANOVAs of Differences Due To Sex, Group, and Their Interaction

Self-Concept Scores	Means				Effect Sizes		
	Public School Boys (N=347)	Public School Girls (N=308)	Private School Boys (N=272)	Private School Girls (N=226)	Sex Effect (Variance Explained)	Group Effect (Variance Explained)	Interaction (Variance Explained)
(1) Physical Abilities	54.16	47.10	51.02	46.44	8.9% **	1.0% **	0.4% *
(2) Physical Appearance	52.32	49.80	50.08	46.68	2.1% **	1.7% **	---
(3) Relations With Peers	51.20	49.35	49.76	49.30	0.4% *	---	---
(4) Relations With Parents	48.66	50.32	50.66	50.83	---	0.4% *	---
(5) Reading	47.22	52.54	49.31	51.60	4.0% **	---	0.6% **
(6) Mathematics	51.02	47.39	51.61	50.06	1.8% **	0.6% **	0.3% *
(7) All School Subjects	49.94	51.86	48.52	49.37	0.5% *	0.9% **	---
(8) Total Non-Academic	50.98	49.48	50.22	48.94	2.9% **	0.6% **	---
(9) Total Academic	49.58	50.45	49.88	50.27	0.4% *	---	---
(10) Total Self-Concept	50.34	49.89	50.07	49.57	0.7% *	---	---

* $p < .05$, ** $p < .01$, --- not statistically significant

Note: Self-concept factor scores were determined by using factor score coefficients derived from the public school sample to weight standardized responses to each item. The three Total Scores were determined by summing the four non-academic scales (1-4), the three academic scales (5-7), and all seven scales. All self-concept scores are standardized to have a mean of 50 and a standard deviation of 10. The two-way ANOVAs were done with the commercially available SPSS program, using the classical experimental approach (see Nie, et al., 1975). The "Variance Explained" values are a ratio of the sums of squared deviations due to the effect to the total sums of squares times 100%.

TABLE 4

Correlations Between Self-Concept Scores and IAR Scales For Public School (N=655) and Private School (N=498) Students

Self-concept Scores	Success Ability	Success Effort	Total Success	Failure Ability	Failure Effort	Total Failure	Total Ability	Total Effort	Total	XTotal
(1) Physical Abilities	04(13)	05(07)	06(12)	-12(-16)	01(-05)	-05(-12)	-06(-03)	04(00)	00(-01)	09(14)
(2) Physical Appearance	-01(17)	04(10)	02(16)	-11(-13)	-07(-06)	-11(-11)	-08(02)	-03(02)	-07(02)	03(18)
(3) Relations With Peers	11(20)	13(17)	14(22)	-08(-12)	00(03)	-04(-04)	01(05)	08(11)	06(10)	14(25)
(4) Relations With Parents	11(24)	16(21)	17(27)	10(-02)	06(02)	09(00)	14(15)	14(13)	17(16)	12(27)
(5) Reading	17(18)	18(19)	21(23)	-03(03)	03(07)	01(07)	09(15)	13(15)	13(18)	18(20)
(6) Mathematics	23(28)	17(25)	24(33)	-06(-07)	02(13)	-01(06)	11(1[illegible])	12(23)	14(23)	17(34)
(7) All School Subjects	21(35)	24(33)	28(42)	-14(-05)	-04(08)	-10(03)	04(20)	11(24)	09(26)	23(41)
(8) Total Non-Academic(1-4)	09(27)	14(19)	15(28)	-08(-16)	00(-04)	-04(-10)	00(06)	08(09)	06(09)	14(30)
(9) Total Academic (5-7)	30(38)	29(35)	36(44)	-11(-04)	01(12)	-05(07)	11(22)	17(28)	17(30)	28(43)
(10) Total Self (1-7)	23(41)	26(34)	30(46)	-12(-13)	00(06)	-06(-03)	06(18)	15(23)	14(25)	26(46)
IAR Coefficient Alpha	32(47)	46(48)	54(60)	39(44)	54(52)	62(58)	37(46)	55(61)	63(68)	40(54)

Note: Self-concept factor scores were determined by using factor score coefficients derived from the public school sample to weight standardized responses to each item. The three Total Scores were determined by summing the four non-academic scales, the three academic scales, and all seven scales. All correlations are presented without decimal points. The reliability estimates of the IAR scales, coefficient alphas, were determined with the commercially available SPSS program (Hull & Nie, 1981).

TABLE 5

Self-Concept Scores	Reading Achievement (Public School Only)	Mathematical Achievement (Private School Only)		
		General	Division	Total
(1) Physical Ability	- .08	- .08	- .07	- .08
(2) Physical Appearance	- .14	.04	- .01	.03
(3) Relations With Peers	- .06	.06	.04	.06
(4) Relations With Parents	- .04	.02	.05	.03
(5) Reading	.22	.20	.15	.21
(6) Mathematics	.15	.51	.46	.55
(7) All School Subjects	.18	.38	.42	.43
(8) Total Non-Academic (1-4)	- .12	.02	.00	.01
(9) Total Academic (5-7)	.18	.50	.44	.54
(10) Total Self (1-7)	.04	.31	.28	.33
Achievement Score Reliability	.82[a]	.82	.83	.88

Note: Self-concept factor scores were determined by using factor score coefficients derived from the public school sample to weight standardized responses to each item. The three Total Scores were derived by summing the four non-academic scales (1-4), the three academic scales (5-7), and all seven scales. The Total score for Mathematical Achievement was determined by summing standarized responses to the General and Division tests. Coefficient alpha reliability estimates were determined with the commercially available SPSS program (Hull & Nie, 1981).

[a]As described earlier, this estimate is likely to be considerably larger than might be expected if reliability had been estimated with independently administered alternative forms.

APPENDIX I -- The Original Version Of The SDQ Used In This Study

SELF DESCRIPTION QUESTIONNAIRE

Pupil's Name _____ Boy ____Girl ____Grade _____

School _____ Teacher _____

This is a chance for you to look at yourself and decide what are some of your strong points and weak points. <u>This is not a test</u> and everyone will have different answers -- so be sure that your answers show how you think about yourself.

Please do **NOT** talk about your answers with anyone else. We will keep your answers private and not show them to anyone else.

Read each of the sentences (or read along with me if they are read aloud) and decide the best answer for each one. Find the answer at the top that fits best and put an X in the space under that answer. Before you start, look at the examples that are below.

	FALSE	MOSTLY FALSE	SOME-TIMES FALSE SOME-TIMES TRUE	MOSTLY TRUE	TRUE
EXAMPLES					
I like to read comic books. (First you must decide whether this statement is true or false or somewhere in between. Suppose, for example, that you really like to read comic books. You should mark "TRUE" by putting an X in the last space)					X
I watch a lot of T.V. (First you must decide whether this statement is true or false or somewhere in between. For example, if you only watch a little bit of T.V. you should mark "MOSTLY FALSE" by putting an X in the second space)		X			
I am neat and tidy. (Suppose you are not neat and tidy, but you are not very messy either. You should mark the response "SOMETIMES FALSE SOMETIMES TRUE" by putting an X in the middle space)			X		

If you want to change an answer cross out the X and put an X in another space on the same line.

If you have any questions, hold up your hand. Otherwise, please turn the page and begin.

	FALSE	MOSTLY FALSE	SOME-TIMES FALSE SOME-TIMES TRUE	MOSTLY TRUE	TRUE
1. I am good looking	____	____	____	____	____
2. I'm good at **ALL SCHOOL SUBJECTS**	____	____	____	____	____
3. I can run fast	____	____	____	____	____
4. I get good marks in **READING**	____	____	____	____	____
5. My parents understand me	____	____	____	____	____
6. I hate **MATHS**	____	____	____	____	____
7. I have lots of friends	____	____	____	____	____
8. I like the way I look	____	____	____	____	____
9. I enjoy doing work for **ALL SCHOOL SUBJECTS**	____	____	____	____	____
10. I like to run and play hard	____	____	____	____	____
11. I like **READING**	____	____	____	____	____
12. My parents push me too much	____	____	____	____	____
13. I enjoy doing work for **MATHS**	____	____	____	____	____
14. I make friends easily	____	____	____	____	____
15. I have a pleasant looking face	____	____	____	____	____
16. I get good marks in **ALL SCHOOL SUBJECTS**	____	____	____	____	____
17. I try to avoid sports and games	____	____	____	____	____
18. I look forward to **READING**	____	____	____	____	____
19. I like my parents	____	____	____	____	____
20. I look forward to **MATHS**	____	____	____	____	____
21. Most kids have more friends than I do	____	____	____	____	____
22. I am an attractive person	____	____	____	____	____

	FALSE	MOSTLY FALSE	SOME-TIMES FALSE SOME-TIMES TRUE	MOSTLY TRUE	TRUE
23. I am dumb in **ALL SCHOOL SUBJECTS**	____	____	____	____	____
24. I enjoy sports and games	____	____	____	____	____
25. I am interested in **READING**	____	____	____	____	____
26. My parents like me	____	____	____	____	____
27. I get good marks in **MATHS**	____	____	____	____	____
28. I get along with other kids easily	____	____	____	____	____
29. I am too fat or too skinny	____	____	____	____	____
30. I learn things quickly in **ALL SCHOOL SUBJECTS**	____	____	____	____	____
31. My body is strong and powerful	____	____	____	____	____
32. I am dumb at **READING**	____	____	____	____	____
33. If I have children of my own I want to bring them up like my parents raised me	____	____	____	____	____
34. I am interested in **MATHS**	____	____	____	____	____
35. I am easy to like	____	____	____	____	____
36. Other kids think I am good looking	____	____	____	____	____
37. Work in **ALL SCHOOL SUBJECTS** is easy for me	____	____	____	____	____
38. I am good at sports	____	____	____	____	____
39. I enjoy doing work for **READING**	____	____	____	____	____
40. My parents and I spend a lot of time together	____	____	____	____	____
41. I learn things quickly in **MATHS**	____	____	____	____	____
42. Other kids want me to be their friend	____	____	____	____	____
43. I have a good looking body	____	____	____	____	____
44. I hate **ALL SCHOOL SUBJECTS**	____	____	____	____	____

	FALSE	MOSTLY FALSE	SOME-TIMES FALSE SOME-TIMES TRUE	MOSTLY TRUE	TRUE
45. I'm good at aiming at targets	____	____	____	____	____
46. Work in **READING** is easy for me	____	____	____	____	____
47. My parents are easy to talk to	____	____	____	____	____
48. I like **MATHS**	____	____	____	____	____
49. I want to have lots of friends	____	____	____	____	____
50. I'm better looking than most of my friends	____	____	____	____	____
51. I am interested in **ALL SCHOOL SUBJECTS**	____	____	____	____	____
52. I am a good athlete	____	____	____	____	____
53. I'm good at **READING**	____	____	____	____	____
54. I get along well with my parents	____	____	____	____	____
55. I'm good at **MATHS**	____	____	____	____	____
56. I am popular with kids of my own age	____	____	____	____	____
57. I have nice features (for example, nose and eyes)	____	____	____	____	____
58. I look forward to **ALL SCHOOL SUBJECTS**	____	____	____	____	____
59. I'm good at throwing a ball	____	____	____	____	____
60. I hate **READING**	____	____	____	____	____
61. My parents and I have a lot of fun together	____	____	____	____	____
62. Work in **MATHS** is easy for me	____	____	____	____	____
63. Most other kids like me	____	____	____	____	____
64. I like **ALL SCHOOL SUBJECTS**	____	____	____	____	____
65. I learn things quickly in **READING**	____	____	____	____	____
66. I am dumb at **MATHS**	____	____	____	____	____

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APPENDIX II -- The Revised Version Of The SDQ (revisions based upon this study)

SELF DESCRIPTION QUESTIONNAIRE

Name.....Boy.....Girl.....Grade/Year.....

Age.....School.....Teacher.....

This is a chance to look at yourself. **It is not a test.** There are no right answers and everyone will have different answers. Be sure that your answers show how you feel about yourself. **PLEASE DO NOT TALK ABOUT YOUR ANSWERS WITH ANYONE ELSE.** We will keep your answers private and not show them to anyone.

When you are ready to begin, please read each sentence and decide your answer. (you may read quietly to yourself as I read aloud.) There are five possible answers for each question -- "True", "False", and three answers in between. There are five boxes next to each sentence, one for each of the answers. The answers are written at the top of the boxes. Choose your answers to a sentence and put a tick (✓) in the box under the answer you choose. **DO NOT** say your answer out loud or talk about it with anyone esle.

Before you start there are three examples below. Somebody named Bob has already answered two of these sentences to show you how to do it. In the third one you must choose your own answer and put in your own tick (✓).

	FALSE	MOSTLY FALSE	SOME-TIMES FALSE, SOME-TIMES TRUE	MOSTLY TRUE	TRUE
EXAMPLES					

EXAMPLES

1. I like to read comic books..... 1 ☐ ☐ ☐ ☐ ☑ 1

(Bob put a tick in the box under the answer "TRUE". This means that he really likes to read comic books. If Bob did not like to read comic books very much, he would have answered "FALSE" or "MOSTLY FALSE".)

2. In general, I am neat and tidy..... 2 ☐ ☐ ☑ ☐ ☐ 2

(Bob answered "SOMETIMES FALSE, SOMETIMES TRUE" because he is not very neat, but he is not very messy either.)

3. I like to watch T.V. ..... 3 ☐ ☐ ☐ ☐ ☐ 3

(For this sentence you have to choose the answer that is best for you. First you must decide if the sentence is "TRUE" or "FALSE" or somewhere in between. If you really like to watch T.V. a lot you would answer "TRUE" by putting a tick in the last box. If you hate watching T.V. you would answer "FALSE" by putting a tick in the first box. If your answer is somewhere in between then you would choose one of the other three boxes.)

If you want to change an answer you have marked you should cross out the tick and put a new tick in another box on the same line. For all the sentences be sure that your tick is on the same line as the sentence you are answering. You should have one answer and only one answer for each sentence. Do not leave out any of the sentences.

If you have any questions put up your hand. Turn over the page and begin. Once you have started, **PLEASE DO NOT TALK.**

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The University of Sydney
1981

		FALSE	MOSTLY FALSE	SOME-TIMES FALSE, SOME-TIMES TRUE	MOSTLY TRUE	TRUE	
1. I am good looking	1	☐	☐	☐	☐	☐	1
2. I'm good at all **SCHOOL SUBJECTS**	2	☐	☐	☐	☐	☐	2
3. I can run fast	3	☐	☐	☐	☐	☐	3
4. I get good marks in **READING**	4	☐	☐	☐	☐	☐	4
5. My parents understand me	5	☐	☐	☐	☐	☐	5
6. I hate **MATHEMATICS**	6	☐	☐	☐	☐	☐	6
7. I have lots of friends	7	☐	☐	☐	☐	☐	7
8. I like the way I look	8	☐	☐	☐	☐	☐	8
9. I enjoy doing work in all **SCHOOL SUBJECTS**	9	☐	☐	☐	☐	☐	9
10. I like to run and play hard	10	☐	☐	☐	☐	☐	10
11. I like **READING**	11	☐	☐	☐	☐	☐	11
12. My parents are usually unhappy or disappointed							

12.	My parents are usually unhappy or disappointed with what I do	12					12
13.	Work in **MATHEMATICS** is easy for me	13					13
14.	I make friends easily	14					14
15.	I have a pleasant looking face	15					15
16.	I get good marks in all **SCHOOL SUBJECTS**	16					16
17.	I hate sports and games	17					17
18.	I'm good at **READING**	18					18
19.	I like my parents	19					19
20.	I look forward to **MATHEMATICS**	20					20
21.	Most kids have more friends than I do	21					21
22.	I am a nice looking person	22					22
23.	I hate all **SCHOOL SUBJECTS**	23					23
24.	I enjoy sports and games	24					24

		FALSE	MOSTLY FALSE	SOME-TIMES FALSE, SOME-TIMES TRUE	MOSTLY TRUE	TRUE	
25.	I am interested in **READING**	25					25
26.	My parents like me	26					26
27.	I get good marks in **MATHEMATICS**	27					27
28.	I get along with other kids easily	28					28
29.	I do lots of important things	29					29
30.	I am ugly	30					30
31.	I learn things quickly in all **SCHOOL SUBJECTS** .	31					31
32.	I have good muscles	32					32
33.	I am dumb at **READING**	33					33
34.	If I have children of my own I want to bring them up like my parents raised me	34					34
35.	I am interested in **MATHEMATICS**	35					35
36.	I am easy to like	36					36
37.	Overall I am no-good	37					37

36. I am easy to like ..... 36 ☐ ☐ ☐ ☐ ☐ 36

37. Overall I am no-good ..... 37 ☐ ☐ ☐ ☐ ☐ 37

38. Other kids think I am good looking ..... 38 ☐ ☐ ☐ ☐ ☐ 38

39. I am interested in all **SCHOOL SUBJECTS** ..... 39 ☐ ☐ ☐ ☐ ☐ 39

40. I am good at sports ..... 40 ☐ ☐ ☐ ☐ ☐ 40

41. I enjoy doing work in **READING** ..... 41 ☐ ☐ ☐ ☐ ☐ 41

42. My parents and I spend a lot of time together ..... 42 ☐ ☐ ☐ ☐ ☐ 42

43. I learn things quickly in **MATHEMATICS** ..... 43 ☐ ☐ ☐ ☐ ☐ 43

44. Other kids want me to be their friend ..... 44 ☐ ☐ ☐ ☐ ☐ 44

45. In general I like being the way I am ..... 45 ☐ ☐ ☐ ☐ ☐ 45

46. I have a good looking body ..... 46 ☐ ☐ ☐ ☐ ☐ 46

47. I am dumb in all **SCHOOL SUBJECTS** ..... 47 ☐ ☐ ☐ ☐ ☐ 47

48. I can run a long way without stopping ..... 48 ☐ ☐ ☐ ☐ ☐ 48

	FALSE	MOSTLY FALSE	SOME-TIMES FALSE, SOME-TIMES TRUE	MOSTLY TRUE	TRUE
49. Work in **READING** is easy for me 49	☐	☐	☐	☐	☐ 49
50. My parents are easy to talk to 50	☐	☐	☐	☐	☐ 50
51. I like **MATHEMATICS** 51	☐	☐	☐	☐	☐ 51
52. I have more friends than most other kids 52	☐	☐	☐	☐	☐ 52
53. Overall I have a lot to be proud of 53	☐	☐	☐	☐	☐ 53
54. I'm better looking than most of my friends 54	☐	☐	☐	☐	☐ 54
55. I look forward to all **SCHOOL SUBJECTS** 55	☐	☐	☐	☐	☐ 55
56. I am a good athlete 56	☐	☐	☐	☐	☐ 56
57. I look forward to **READING** 57	☐	☐	☐	☐	☐ 57
58. I get along well with my parents 58	☐	☐	☐	☐	☐ 58
59. I'm good at **MATHEMATICS** 59	☐	☐	☐	☐	☐ 59

59. I'm good at **MATHEMATICS** 59 59

60. I am popular with kids of my own age 60 60

61. I hate myself 61 61

62. I have nice features like nose, and eyes, and hair .. 62 62

63. Work in all **SCHOOL SUBJECTS** is easy for me ... 63 63

64. I'm good at throwing a ball 64 64

65. I hate **READING** 65 65

66. My parents and I have a lot of fun together 66 66

67. I enjoy doing work in **MATHEMATICS** 67 67

68. Most other kids like me 68 68

69. Overall I am good at things I like to do 69 69

70. I like all **SCHOOL SUBJECTS** 70 70

71. I learn things quickly in **READING** 71 71

72. I am dumb at **MATHEMATICS** 72 72